

Factory Integration TWG Report Out

**Face to Face Meeting #2
Munich, Germany
11, 12, 13 April 1999**

Factory Integration Participants

<u>Representative</u>	<u>Region</u>	<u>Company</u>
1. Blaine Crandell	US	TI
2. Ashwin Ghatalia	US	IBM
3. Gerhard Goltz	Europe	ST
4. Randy Goodall	US	SEMATECH
5. Michio Honma	Japan	NEC
6. Ron Huber	Europe	Siemens
7. Jim Hutchby	US	SRC
8. Shoichi Komada	Japan	Toshiba
9. Jeff Pettinato	US	Intel
10. Dev Pillai	US	Intel
11. Court Skinner	US	SRC

Factory Integration Status

★ Factory Integration Scope Agreement made

☞ Three difficult challenges defined

- Complexity Management, Factory Optimization, Extendibility/Flexibility/Scalability,

☞ Five technology thrust areas being driven

- Production Equipment, Material Handling, Facilities, Factory Systems, Production Policy
- International sub-teams now active to define requirements tables and potential solutions

★ Preliminary Technology Requirements table defined with focus on 21 metrics

★ Process to complete requirements table values, and potential solutions sections defined

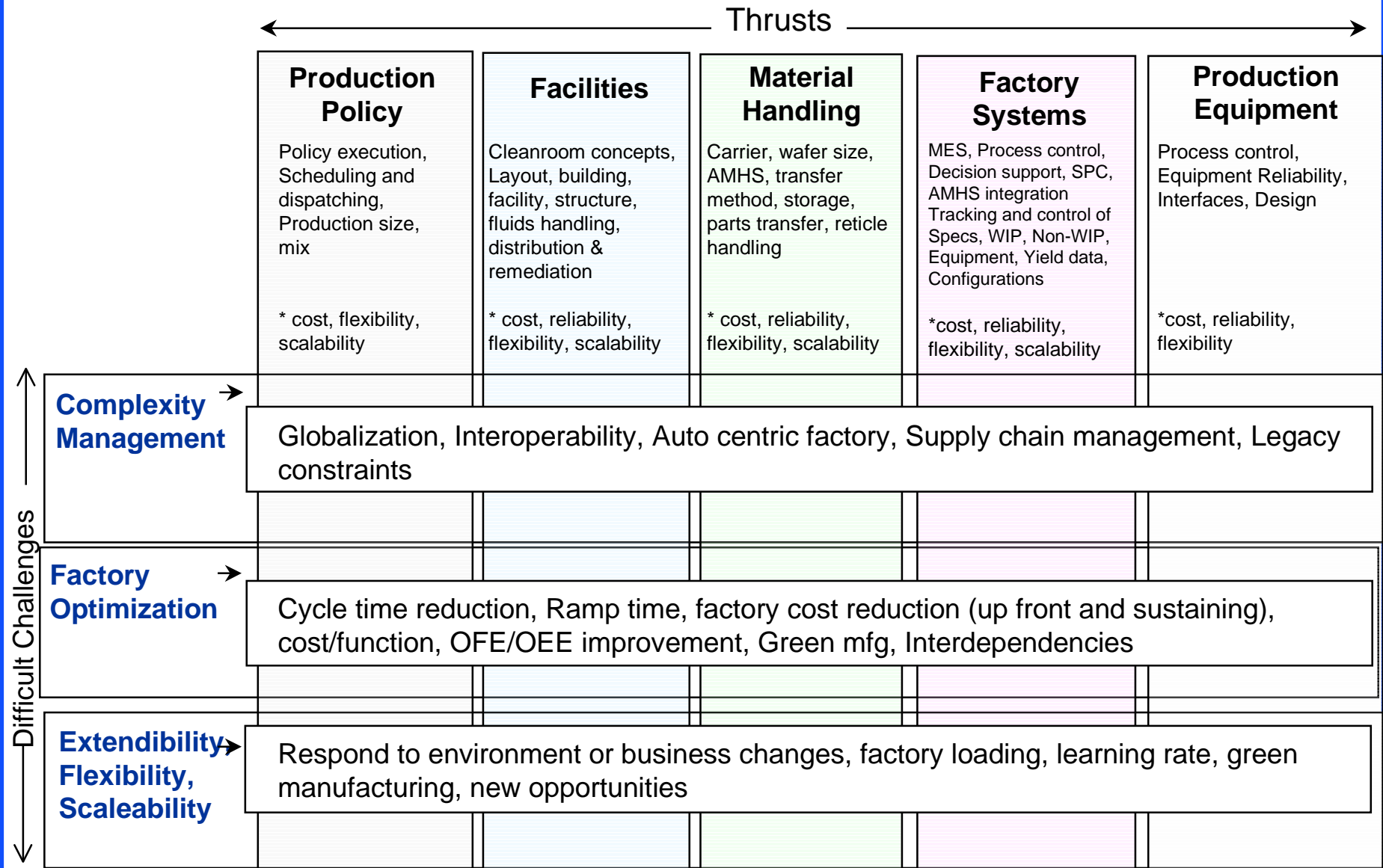
★ International WG/Sub-WG Video conference schedules defined through September

★ Cross-cut issues being defined/discussed

☞ Focus on ES&H and Front End Processes

**International Roadmap
for Semiconductors**

Factory Integration Challenges & Technology Thrusts



**International Roadmap
for Semiconductors**

Factory Integration - Bones of Contention Need Clarification from IRC

★ We need wafer size clarification. Can we assume:

☞ 200mm only - 180nm?

☞ 200mm and 300mm - 130nm?

☞ 300mm only - 100nm?

☞ 450mm start node - When (which node and year)?

★ When will Batch processing equipment go away and all tools become single wafer processing? (ex: Furnace & Wet Stn)?

★ We are assuming Si based manufacturing: Roadmap seems to exceed scaling limit of CMOS (100nm-35nm)

★ Factory size: We are assuming our FI roadmap is driven by:

☞ hi-vol/hi-mix type factories, and

☞ hi-vol/low-mix type factories

➤ we are not considering low-vol/low-mix and low-vol/hi-mix factories because these factories are typically not on the technology treadmill.